



LED Module

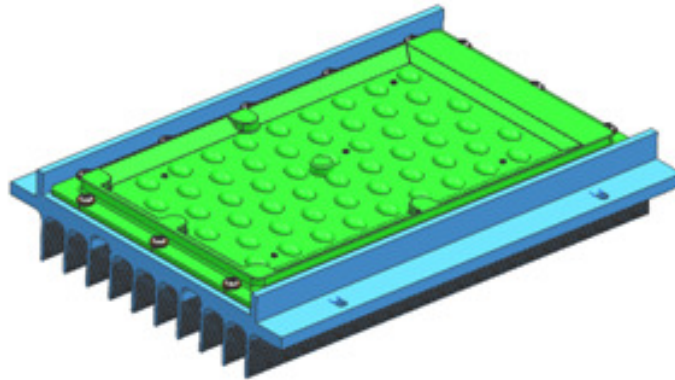
REV.NO.

PAGE

03

1/10

SPECIFICATION



| LED Module for Outdoor Engine Series | |
|--------------------------------------|--|
| Model Name | 54 LED Module |
| Type | CRI : Min. 70 CCT : Nominal 5000K Power Consumption : Typ. 83W Luminous Flux : Typ. 6800lm Light Distribution : Type II - Short |
| Parts No. | STOIMW750809I7SE31 |

SAMSUNG ELECTRONICS CO.,LTD.



LED Module

REV.NO.

PAGE

03

2/10

CONTENTS OF SPECIFICATION

1. APPLICATION 4

2. FUNDAMENTAL SPECIFICATIONS OF MODULE 6

3. PARTS SPECIFICATIONS 7

4. APPEARANCE AND STRUCTURE 8

5. PACKING SPECIFICATION 9

[APPENDIX 1] White LED Module Product Codes 10

This is a product specification of [STOIMW750809I7SE31](#), one of [STOIMWvwwxylzzE31](#).
 Please refer to relevant [General and Special Application Notes](#) for thermal, optical, electrical, mechanical design and reliability information.



LED Module

REV.NO.

PAGE

03

3/10

1. APPLICATION

54 LED Module is designed as a core component in **LED Outdoor Engine Series** for street light, road light and flood light application. This document especially specifies **54 LED Outdoor Module**.

1-1 LED Outdoor Engine

LED Outdoor Engine Series is composed of **LED Module**, **LED Driver** and **Extension Cable**.

1-1-1 LED Module

There are two different types of heat sink designs for LED Outdoor Module, intended for thermal management either by engine or by fixture.

This document especially specifies **54 LED Module**.



(a) 36 LED Module



(b) 54 LED Module

1-1-2 LED Driver

LED Driver feed current to LED Module.



(a) 60/90W LED Driver



(b) 120/180W LED Driver

1-1-3 Extension Cable

Extension Cable is available to feed current to LED modules from separated LED Driver.



(a) 7M Extension Cable



(b) 15M Extension Cable



LED Module

REV.NO. PAGE

03 4/10

1-2 LED Outdoor Engine Series

Typical operating current for 54 LED module is set at 1350mA. Typical luminous flux is **6800lm**.

1-2-1 Lumen with LED Driver(Engine : Typ. 82lm/W)

| | Power Consumption (W) | Driver Output Channels (ea) | Operating Current (mA) | Lumen Output (lm) | Related Products STOIMWvwvwxylzzE31 |
|----------------------|-----------------------|-----------------------------|------------------------|-------------------|--|
| 36 LED Module | 55 | 1 | 900 | 4500 | STOOPY19060Z058Szz STOOPY190A2Z058Szz STOICR12266221Pxx0 |
| 54 LED Module | 83 | 1 | 1350 | 6800 | STOOPY21390Z058Szz STOOPY213A8Z058Szz STOICR12266221Pxx0 |

1-2-2 Using LED Module and Driver.

LED Driver feed current to LED Module. If LED Driver is far from LED Module, Extension Cable is possible to connect them.



(a) without Extension Cable

(b) with Extension Cable

1-2-3 Optic Solutions

| Application | Light Distribution | Solutions | Material |
|--------------|--------------------|--|----------|
| Street Light | IESNA Type I | Short(1), Medium(1) | PC |
| | IESNA Type II | Short(2), Medium(2) | PC |
| | IESNA Type III | Short(2), Medium(2) | PC |
| | IESNA Type IV | Short(2), Medium(1) | PC |
| | IESNA Type V | Short(1), Medium(1) | PC |
| Flood Light | Narrow | Circular(BA15/25/40) | PC |
| | Medium | Circular(BA50/65), Rectangular(BA50x80), Batwing(BA85) | PC |
| | Wide | Circular(BA100), Batwing(BA120) Rectangular(BA90x130) | PC |

* BA : Beam Angle, PC : Polycarbonate



LED Module

| | |
|---------|------|
| REV.NO. | PAGE |
| 03 | 5/10 |

2. FUNDAMENTAL SPECIFICATIONS OF MODULE

| No. | ARTICLE | SPECIFICATIONS | | | | | |
|-------|--|---|------|------|------|----|--------------------|
| 2-1 | Photometric Specification of LED Module @1350mA | | | | | | |
| | CCT | Article | | | | | |
| | Symbol | MIN | | | | | |
| | TYP | MAX | | | | | |
| 5000K | Luminous Flux | LF | 6225 | 6800 | - | lm | Goniometer |
| | Color Temperature | CCT | 4850 | 5300 | 5750 | K | Integrating Sphere |
| | Color Rendering Index | CRI | 70 | - | - | Ra | Integrating Sphere |
| | | ※ Typical values are not necessarily the same as the nominal values. | | | | | |
| | | Light Distribution Profile : Type II – Short with Optimized Illuminance Uniformity | | | | | |
| | | | | | | | |
| | | ※ The isolux diagram is drawn at the luminaire height of 5m. | | | | | |
| 2-2 | Dimension | · LED Module : 245(L)×186(W)×45.6(H) [mm] ±1.0[mm] | | | | | |
| 2-3 | Weight | · LED Lighting Module : {1.66kg ± 0.2kg} * 4ea · Total Weight (including packing box) : 7.5kg ± 0.5kg/1box | | | | | |
| 2-4 | Operating Temperature | · Case Temperature : +3℃ ~ +80℃ (Tc ~58℃ at Ta ~25℃) · Tc measurement point | | | | | |
| 2-5 | Storage Temperature | · Ta : -40℃ ~ +85℃ | | | | | |
| 2-6 | Dust-proof Water-proof | · IP66 · Damp Location | | | | | |



LED Module

REV.NO. PAGE

03 6/10

| No. | ARTICLE | SPECIFICATIONS | | | | | |
|---|---|----------------|------------|------------|------------|-------------|--|
| 2-7 | Electrical Specification of LED Module | | | | | | |
| | Article | Symbol | MIN | TYP | MAX | Unit | Remarks |
| | Power Consumption | P | 74.7 | 83 | 91.3 | W | After 2hr aging |
| | Operating Current | Iop | 1283 | 1350 | 1417 | mA | per 1 Module [450mA /PKG 1EA,Typ.] |
| | Operating Voltage | Vdc | 52 | - | 64 | V | per 1 Module [3.2V/PKG 1EA, Typ..] 18 LEDs in Series |
| Electrical Circuit | Maximum of 2 modules can be in parallel connection with one LED driver. | | | | | | |
| ※ The power consumption for a specific module is dependent on the operating voltage. The maximum operating current means the highest limit in any operating condition. | | | | | | | |

3. PARTS SPECIFICATIONS

| No. | ARTICLE | SPECIFICATIONS |
|-----|-------------------------|--|
| 3-1 | Lens Cover Screw | <ul style="list-style-type: none"> Material : Stainless Steel with Teflon Washer Location : between the array lens and heat sink |
| 3-2 | Array Lens Cover | <ul style="list-style-type: none"> Material : Polycarbonate Lens Type : Type 2 - Short |
| 3-3 | Seal Rubber | <ul style="list-style-type: none"> Material : Molded Silicone |
| 3-4 | LED Board | <ul style="list-style-type: none"> LED : Ceramic PKG, CRI min. 70 Material : MCPCB, Aluminum Thickness : 1.6 mm Stainless Steel Screws : 9ea |
| 3-5 | Harness | <ul style="list-style-type: none"> Material : PVC Wires : UL2464, 22 AWG Length(wires) : 300 mm Connector Plug : IP66 |
| 3-6 | Heat Sink | <ul style="list-style-type: none"> Material : Extruded Aluminium Thermal Pad between the PCB and Heat Sink |



LED Module

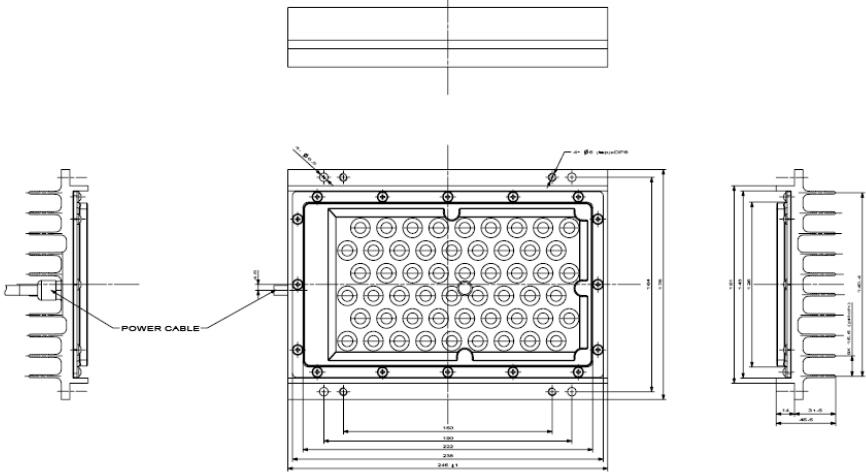
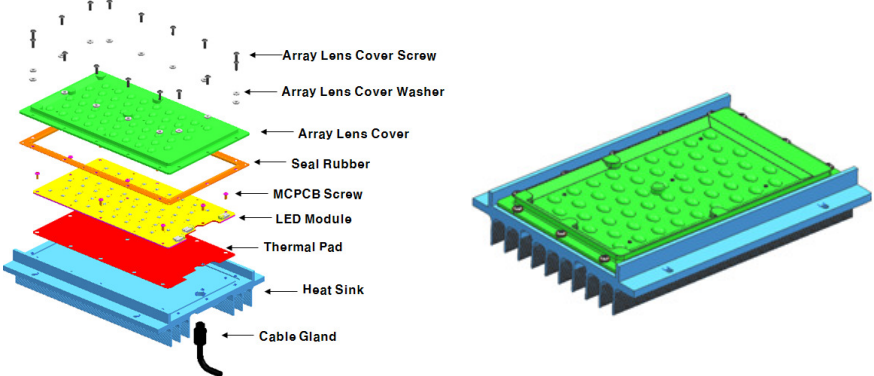

REV.NO.

PAGE

03

7/10

4. APPEARANCE AND STRUCTURE

| No. | ARTICLE | SPECIFICATIONS |
|-----|---|--|
| 4-1 | <p>Appearance and Dimension (Type II-S)</p> |  <p>※ Appearance is different for various optical solutions depending on the combination of the 54 core lenses. Critical dimensions are all the same for the optical solutions except for the thickness difference at the core lens cross-section.</p> |
| 4-2 | <p>Structure (Type II-S)</p> |  |
| 4-3 | <p>Labelling (General)</p> |  <p>[Module Label] [Box Label]</p> |



LED Module

REV.NO.

PAGE

03

8/10

5. PACKING SPECIFICATION

5-1 Packing Method

5-1-1 Inner Box : 4 modules in one inner box

4 PCs/Inner Box

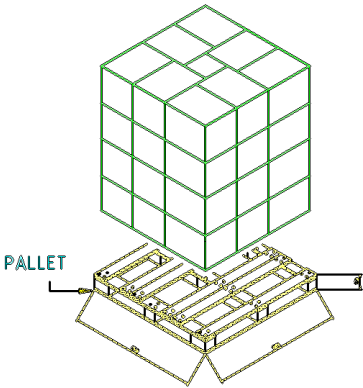


5-1-2 Outer Box : 4 modules on 1 stacks of inner boxes in one outer box

1 Stacks of Inner Boxes
(330 x 323 x 208)



5-2 Pallet : 32 boxes(128 modules) on one pallet



32 OUT BOXES / PALLET
128 EA / PALLET



LED Module

| | |
|---------|------|
| REV.NO. | PAGE |
| 03 | 9/10 |

[APPENDIX 1] White LED Module Product Codes

STOIMWvwxxylzzE31

| CRI(Ra) | Code |
|-----------|------|
| 60.0~69.9 | 6 |
| 70.0~79.9 | 7 |
| 80.0~89.9 | 8 |
| 90.0~99.9 | 9 |
| 100 | A |
| 60.0~64.9 | B |
| 65.0~69.9 | C |
| 65.0~74.9 | D |
| 70.0~74.9 | E |
| 75.0~79.9 | F |
| 75.0~84.9 | G |
| 80.0~84.9 | H |
| 85.0~89.9 | I |
| 85.0~94.9 | J |
| 90.0~94.9 | K |
| 95.0~99.9 | L |

| Nominal CCT(K) | Code |
|----------------|------|
| 6500 | 65 |
| 5700 | 57 |
| 5000 | 50 |
| 4500 | 45 |
| 4000 | 40 |
| 3500 | 35 |
| 3000 | 30 |
| 2700 | 27 |

| Power Consumption (W) | Code |
|-----------------------|------|
| 55 | 55 |
| 80 | 80 |

| Luminous Flux(lm) | Code |
|-------------------|------|
| 6400~10000 | 9 |
| 4300~6500 | 8 |
| 3200~4400 | 7 |
| 2600~3300 | 6 |
| 2300~2700 | 5 |
| 2150~2400 | 4 |
| 1950~2200 | 3 |
| 1750~2000 | 2 |
| 1600~1800 | 1 |
| 1450~1650 | 0 |

| Code | Light Distribution | |
|------|--------------------|------------------|
| | Lambertian | without lens |
| 0L | Lambertian | without lens |
| 1S | IESNA Type 1 | short |
| 1M | IESNA Type 1 | medium |
| 2S | IESNA Type 2 | short(l) |
| 2M | IESNA Type 2 | medium(l) |
| 7S | IESNA Type 2 | short(L) |
| 7M | IESNA Type 2 | medium(L) |
| 3S | IESNA Type 3 | short(l) |
| 3M | IESNA Type 3 | medium(l) |
| 8S | IESNA Type 3 | short(l) |
| 8M | IESNA Type 3 | medium(L) |
| 4S | IESNA Type 4 | short(l) |
| 4M | IESNA Type 4 | medium(l) |
| 9S | IESNA Type 4 | short(L) |
| 5S | IESNA Type 5 | short |
| 5M | IESNA Type 5 | medium |
| 15 | 15 deg | circular |
| 25 | 25 deg | circular |
| 40 | 40 deg | circular |
| 50 | 50 deg | circular |
| 65 | 65 deg | circular |
| 85 | 85 deg | circular batwing |
| A0 | 100 deg | circular |
| C0 | 120 deg | circular batwing |
| 58 | 50 x 80 deg | rectangular |
| 9D | 90 x 130 deg | rectangular |

(l) : optimized for Illuminance uniformity
 (L) : optimized for Luminance uniformity